

EXTRACTION OIL & GAS

Adams County

Sec 29-T1-R66W

PC 1S-66-2928-19NH

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

12 September, 2017



Project: Adams County
Site: Sec 29-T1-R66W
Well: PC 1S-66-2928-19NH
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL 1



Azimuths to True North
Magnetic North: 8.17°
Magnetic Field
Strength: 52115.7nT
Dip Angle: 66.47°
Date: 9/11/2017
Model: IGRF2015

WELL DETAILS: PC 1S-66-2928-19NH

+N/-S	+E/-W	Northing	Easting	5066.00	Latitude	Longitude	Slot
0.00	0.00	1219337.20	3195119.35	39° 56' 0.096 N	104° 48' 15.120 W		

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1250.02	17.00	228.06	1237.60	-83.66	-93.12	2.00	228.06	-81.07	
4	6393.05	17.00	228.06	6155.90	-1088.64	-1211.68	0.00	0.00	-1054.85	
5	7243.07	0.00	0.00	6993.50	-1172.30	-1304.80	2.00	180.00	-1135.92	
6	7273.07	0.00	0.00	7023.50	-1172.30	-1304.80	0.00	0.00	-1135.92	
7	8023.13	90.00	90.08	7501.00	-1172.93	-827.30	12.00	90.08	-662.64	PC 19NH LP
8	17619.82	90.00	90.08	7501.00	-1185.97	8769.38	0.00	0.00	8849.21	PC 19NH PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	BUILD 2°/100'
1250.02	17.00	228.06	1237.60	-83.66	-93.12	-81.07	125.18	HOLD 17° INC
6393.05	17.00	228.06	6155.90	-1088.64	-1211.68	-1054.85	1628.90	DROP 2°/100'
7243.07	0.00	0.00	6993.50	-1172.30	-1304.80	-1135.92	1754.08	HOLD VERTICAL
7273.07	0.00	0.00	7023.50	-1172.30	-1304.80	-1135.92	1754.08	KOP, BUILD 12°/100'
8023.13	90.00	90.08	7501.00	-1172.93	-827.30	-662.64	2231.58	LP @ 90° INC, 90.08° AZM HOLD
17619.82	90.00	90.08	7501.00	-1185.97	8769.38	8849.21	11828.27	TD at 17619.82° MD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	39° 55'	Latitude	Longitude	Shape
PC 19NH LP	7501.00	-1172.93	-827.30	1218157.82	3194301.27	39° 55'	48.504 N	104° 48' 25.740 W	Point
PC 19NH PBHL	7501.00	-1185.97	8769.38	1218220.08	3203897.76	39° 55'	48.360 N	104° 46' 22.548 W	Point
- plan hits target center									

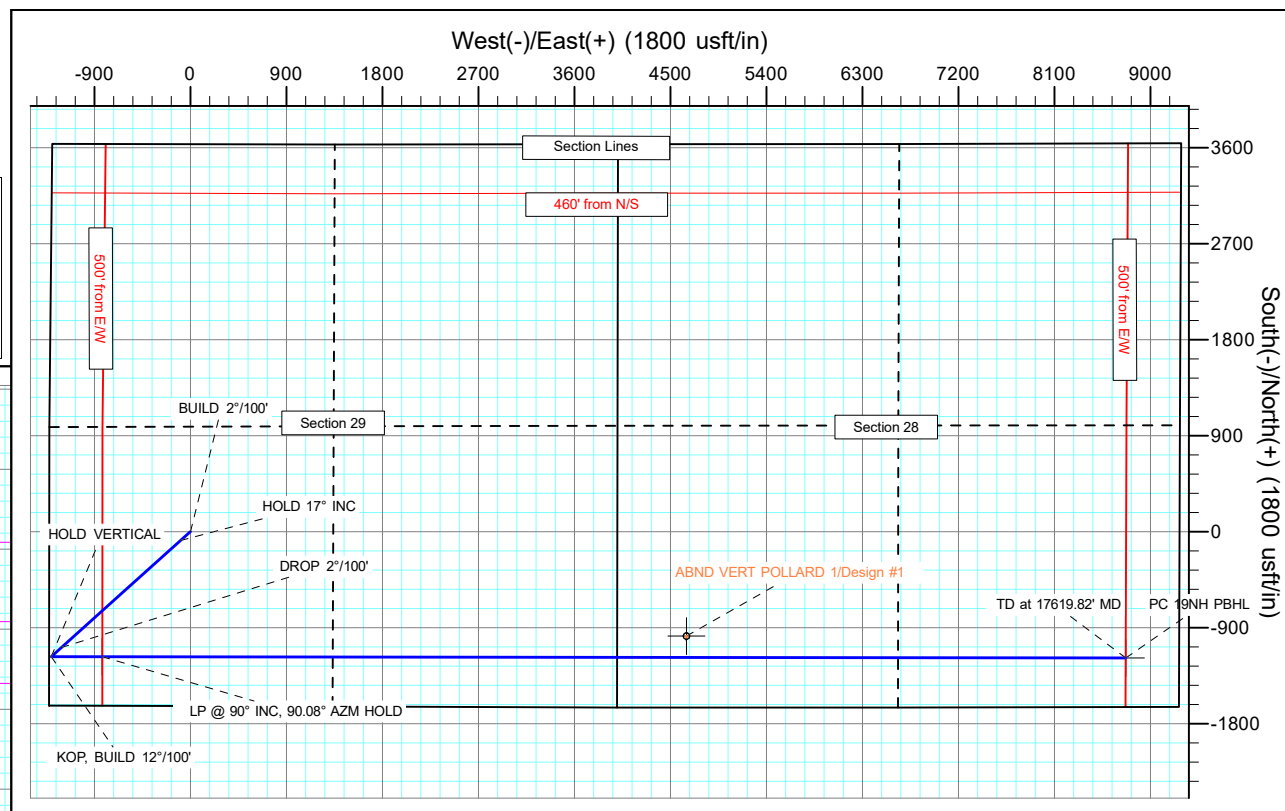
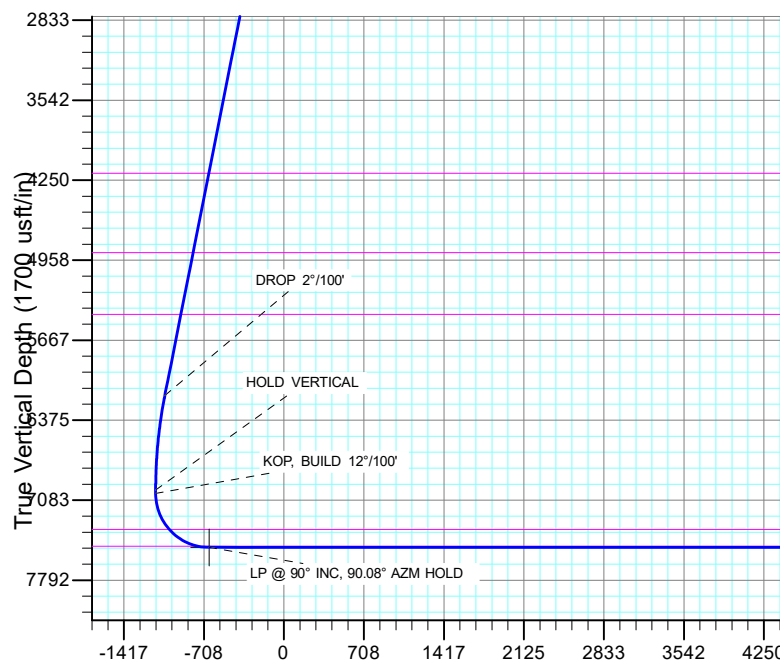
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4188.00	4335.23	PARKMAN
4892.00	5071.40	SUSSEX
5437.00	5641.30	SHANNON
7342.00	7621.74	NIOBRARA
7491.00	7925.23	NIO B TARGET

PROJECT DETAILS: Adams County

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SHL:
1635' FSL, 1325' FWL
Sec 29-T1S-R66W
LP:
460' FSL, 500' FWL
Sec 29-T1S-R66W
BHL:
460' FSL, 500' FEL
Sec 28-T1S-R66W



Vertical Section at 97.70° (1700 usft/in)

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-19NH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-19NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Project	Adams County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 29-T1-R66W			
Site Position:		Northing:	1,217,694.95 usft	Latitude:	39° 55' 43.968 N
From:	Lat/Long	Easting:	3,193,805.68 usft	Longitude:	104° 48' 32.148 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.45 °

Well	PC 1S-66-2928-19NH					
Well Position	+N/-S	1,631.96 usft	Northing:	1,219,337.20 usft	Latitude:	39° 56' 0.096 N
	+E/-W	1,326.42 usft	Easting:	3,195,119.35 usft	Longitude:	104° 48' 15.120 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,066.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/11/2017	8.17	66.47	52,115.70668844

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	97.70

Plan Survey Tool Program	Date	9/12/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,619.79	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,250.02	17.00	228.06	1,237.60	-83.66	-93.12	2.00	2.00	0.00	228.06	
6,393.05	17.00	228.06	6,155.90	-1,088.64	-1,211.68	0.00	0.00	0.00	0.00	
7,243.07	0.00	0.00	6,993.50	-1,172.30	-1,304.80	2.00	-2.00	0.00	180.00	
7,273.07	0.00	0.00	7,023.50	-1,172.30	-1,304.80	0.00	0.00	0.00	0.00	
8,023.13	90.00	90.08	7,501.00	-1,172.93	-827.30	12.00	12.00	12.01	90.08	PC 19NH LP
17,619.82	90.00	90.08	7,501.00	-1,185.97	8,769.38	0.00	0.00	0.00	0.00	PC 19NH PBHL

Planning Report

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-19NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
BUILD 2°/100'									
500.00	2.00	228.06	499.98	-1.17	-1.30	-1.13	2.00	2.00	0.00
600.00	4.00	228.06	599.84	-4.66	-5.19	-4.52	2.00	2.00	0.00
700.00	6.00	228.06	699.45	-10.49	-11.67	-10.16	2.00	2.00	0.00
800.00	8.00	228.06	798.70	-18.63	-20.74	-18.05	2.00	2.00	0.00
900.00	10.00	228.06	897.47	-29.09	-32.38	-28.18	2.00	2.00	0.00
1,000.00	12.00	228.06	995.62	-41.84	-46.57	-40.54	2.00	2.00	0.00
1,100.00	14.00	228.06	1,093.06	-56.87	-63.30	-55.11	2.00	2.00	0.00
1,200.00	16.00	228.06	1,189.64	-74.17	-82.55	-71.87	2.00	2.00	0.00
1,250.02	17.00	228.06	1,237.60	-83.66	-93.12	-81.07	2.00	2.00	0.00
HOLD 17° INC									
1,300.00	17.00	228.06	1,285.40	-93.43	-103.99	-90.53	0.00	0.00	0.00
1,400.00	17.00	228.06	1,381.03	-112.97	-125.74	-109.46	0.00	0.00	0.00
1,500.00	17.00	228.06	1,476.66	-132.51	-147.49	-128.40	0.00	0.00	0.00
1,600.00	17.00	228.06	1,572.29	-152.05	-169.24	-147.33	0.00	0.00	0.00
1,700.00	17.00	228.06	1,667.92	-171.59	-190.99	-166.27	0.00	0.00	0.00
1,800.00	17.00	228.06	1,763.55	-191.13	-212.74	-185.20	0.00	0.00	0.00
1,900.00	17.00	228.06	1,859.18	-210.67	-234.48	-204.13	0.00	0.00	0.00
2,000.00	17.00	228.06	1,954.81	-230.21	-256.23	-223.07	0.00	0.00	0.00
2,100.00	17.00	228.06	2,050.44	-249.75	-277.98	-242.00	0.00	0.00	0.00
2,200.00	17.00	228.06	2,146.07	-269.29	-299.73	-260.94	0.00	0.00	0.00
2,300.00	17.00	228.06	2,241.70	-288.83	-321.48	-279.87	0.00	0.00	0.00
2,400.00	17.00	228.06	2,337.33	-308.38	-343.23	-298.80	0.00	0.00	0.00
2,500.00	17.00	228.06	2,432.96	-327.92	-364.98	-317.74	0.00	0.00	0.00
2,600.00	17.00	228.06	2,528.59	-347.46	-386.73	-336.67	0.00	0.00	0.00
2,700.00	17.00	228.06	2,624.22	-367.00	-408.48	-355.61	0.00	0.00	0.00
2,800.00	17.00	228.06	2,719.85	-386.54	-430.23	-374.54	0.00	0.00	0.00
2,900.00	17.00	228.06	2,815.48	-406.08	-451.97	-393.47	0.00	0.00	0.00
3,000.00	17.00	228.06	2,911.11	-425.62	-473.72	-412.41	0.00	0.00	0.00
3,100.00	17.00	228.06	3,006.74	-445.16	-495.47	-431.34	0.00	0.00	0.00
3,200.00	17.00	228.06	3,102.37	-464.70	-517.22	-450.28	0.00	0.00	0.00
3,300.00	17.00	228.06	3,198.00	-484.24	-538.97	-469.21	0.00	0.00	0.00
3,400.00	17.00	228.06	3,293.63	-503.78	-560.72	-488.14	0.00	0.00	0.00
3,500.00	17.00	228.06	3,389.26	-523.32	-582.47	-507.08	0.00	0.00	0.00
3,600.00	17.00	228.06	3,484.89	-542.86	-604.22	-526.01	0.00	0.00	0.00
3,700.00	17.00	228.06	3,580.53	-562.40	-625.97	-544.95	0.00	0.00	0.00
3,800.00	17.00	228.06	3,676.16	-581.94	-647.72	-563.88	0.00	0.00	0.00
3,900.00	17.00	228.06	3,771.79	-601.48	-669.47	-582.82	0.00	0.00	0.00
4,000.00	17.00	228.06	3,867.42	-621.02	-691.21	-601.75	0.00	0.00	0.00
4,100.00	17.00	228.06	3,963.05	-640.56	-712.96	-620.68	0.00	0.00	0.00
4,200.00	17.00	228.06	4,058.68	-660.10	-734.71	-639.62	0.00	0.00	0.00
4,300.00	17.00	228.06	4,154.31	-679.64	-756.46	-658.55	0.00	0.00	0.00
4,335.23	17.00	228.06	4,188.00	-686.53	-764.12	-665.22	0.00	0.00	0.00
PARKMAN									
4,400.00	17.00	228.06	4,249.94	-699.18	-778.21	-677.49	0.00	0.00	0.00
4,500.00	17.00	228.06	4,345.57	-718.73	-799.96	-696.42	0.00	0.00	0.00
4,600.00	17.00	228.06	4,441.20	-738.27	-821.71	-715.35	0.00	0.00	0.00
4,700.00	17.00	228.06	4,536.83	-757.81	-843.46	-734.29	0.00	0.00	0.00

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Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,800.00	17.00	228.06	4,632.46	-777.35	-865.21	-753.22	0.00	0.00	0.00
4,900.00	17.00	228.06	4,728.09	-796.89	-886.96	-772.16	0.00	0.00	0.00
5,000.00	17.00	228.06	4,823.72	-816.43	-908.70	-791.09	0.00	0.00	0.00
5,071.40	17.00	228.06	4,892.00	-830.38	-924.23	-804.61	0.00	0.00	0.00
SUSSEX									
5,100.00	17.00	228.06	4,919.35	-835.97	-930.45	-810.02	0.00	0.00	0.00
5,200.00	17.00	228.06	5,014.98	-855.51	-952.20	-828.96	0.00	0.00	0.00
5,300.00	17.00	228.06	5,110.61	-875.05	-973.95	-847.89	0.00	0.00	0.00
5,400.00	17.00	228.06	5,206.24	-894.59	-995.70	-866.83	0.00	0.00	0.00
5,500.00	17.00	228.06	5,301.87	-914.13	-1,017.45	-885.76	0.00	0.00	0.00
5,600.00	17.00	228.06	5,397.50	-933.67	-1,039.20	-904.69	0.00	0.00	0.00
5,641.30	17.00	228.06	5,437.00	-941.74	-1,048.18	-912.51	0.00	0.00	0.00
SHANNON									
5,700.00	17.00	228.06	5,493.13	-953.21	-1,060.95	-923.63	0.00	0.00	0.00
5,800.00	17.00	228.06	5,588.76	-972.75	-1,082.70	-942.56	0.00	0.00	0.00
5,900.00	17.00	228.06	5,684.39	-992.29	-1,104.45	-961.50	0.00	0.00	0.00
6,000.00	17.00	228.06	5,780.02	-1,011.83	-1,126.20	-980.43	0.00	0.00	0.00
6,100.00	17.00	228.06	5,875.65	-1,031.37	-1,147.94	-999.36	0.00	0.00	0.00
6,200.00	17.00	228.06	5,971.28	-1,050.91	-1,169.69	-1,018.30	0.00	0.00	0.00
6,300.00	17.00	228.06	6,066.91	-1,070.45	-1,191.44	-1,037.23	0.00	0.00	0.00
6,393.05	17.00	228.06	6,155.90	-1,088.64	-1,211.68	-1,054.85	0.00	0.00	0.00
DROP 2°/100'									
6,400.00	16.86	228.06	6,162.54	-1,089.99	-1,213.19	-1,056.16	2.00	-2.00	0.00
6,500.00	14.86	228.06	6,258.73	-1,108.25	-1,233.51	-1,073.86	2.00	-2.00	0.00
6,600.00	12.86	228.06	6,355.82	-1,124.26	-1,251.34	-1,089.37	2.00	-2.00	0.00
6,700.00	10.86	228.06	6,453.68	-1,138.00	-1,266.62	-1,102.68	2.00	-2.00	0.00
6,800.00	8.86	228.06	6,552.19	-1,149.45	-1,279.36	-1,113.77	2.00	-2.00	0.00
6,900.00	6.86	228.06	6,651.25	-1,158.59	-1,289.54	-1,122.63	2.00	-2.00	0.00
7,000.00	4.86	228.06	6,750.72	-1,165.41	-1,297.13	-1,129.24	2.00	-2.00	0.00
7,100.00	2.86	228.06	6,850.49	-1,169.91	-1,302.14	-1,133.60	2.00	-2.00	0.00
7,200.00	0.86	228.06	6,950.43	-1,172.08	-1,304.56	-1,135.71	2.00	-2.00	0.00
7,243.07	0.00	0.00	6,993.50	-1,172.30	-1,304.80	-1,135.92	2.00	-2.00	0.00
HOLD VERTICAL									
7,273.07	0.00	0.00	7,023.50	-1,172.30	-1,304.80	-1,135.92	0.00	0.00	0.00
KOP, BUILD 12°/100'									
7,275.00	0.23	90.08	7,025.43	-1,172.30	-1,304.80	-1,135.91	12.00	12.00	0.00
7,300.00	3.23	90.08	7,050.41	-1,172.30	-1,304.04	-1,135.16	12.00	12.00	0.00
7,325.00	6.23	90.08	7,075.33	-1,172.30	-1,301.98	-1,133.12	12.00	12.00	0.00
7,350.00	9.23	90.08	7,100.10	-1,172.31	-1,298.62	-1,129.79	12.00	12.00	0.00
7,375.00	12.23	90.08	7,124.66	-1,172.31	-1,293.96	-1,125.18	12.00	12.00	0.00
7,400.00	15.23	90.08	7,148.94	-1,172.32	-1,288.03	-1,119.29	12.00	12.00	0.00
7,425.00	18.23	90.08	7,172.88	-1,172.33	-1,280.83	-1,112.16	12.00	12.00	0.00
7,450.00	21.23	90.08	7,196.41	-1,172.34	-1,272.39	-1,103.80	12.00	12.00	0.00
7,475.00	24.23	90.08	7,219.46	-1,172.36	-1,262.74	-1,094.23	12.00	12.00	0.00
7,500.00	27.23	90.08	7,241.98	-1,172.37	-1,251.88	-1,083.47	12.00	12.00	0.00
7,525.00	30.23	90.08	7,263.90	-1,172.39	-1,239.87	-1,071.56	12.00	12.00	0.00
7,550.00	33.23	90.08	7,285.16	-1,172.40	-1,226.72	-1,058.53	12.00	12.00	0.00
7,575.00	36.23	90.08	7,305.71	-1,172.42	-1,212.48	-1,044.42	12.00	12.00	0.00
7,600.00	39.23	90.08	7,325.48	-1,172.44	-1,197.19	-1,029.25	12.00	12.00	0.00
7,621.74	41.84	90.08	7,342.00	-1,172.46	-1,183.06	-1,015.25	12.00	12.00	0.00
NIOBRARA									
7,625.00	42.23	90.08	7,344.42	-1,172.46	-1,180.88	-1,013.09	12.00	12.00	0.00
7,650.00	45.23	90.08	7,362.48	-1,172.49	-1,163.60	-995.96	12.00	12.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-19NH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-19NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
7,675.00	48.23	90.08	7,379.62	-1,172.51	-1,145.40	-977.92	12.00	12.00	0.00	
7,700.00	51.23	90.08	7,395.78	-1,172.54	-1,126.32	-959.02	12.00	12.00	0.00	
7,725.00	54.23	90.08	7,410.92	-1,172.56	-1,106.43	-939.30	12.00	12.00	0.00	
7,750.00	57.23	90.08	7,424.99	-1,172.59	-1,085.78	-918.83	12.00	12.00	0.00	
7,775.00	60.23	90.08	7,437.97	-1,172.62	-1,064.41	-897.65	12.00	12.00	0.00	
7,800.00	63.23	90.08	7,449.81	-1,172.65	-1,042.40	-875.83	12.00	12.00	0.00	
7,825.00	66.23	90.08	7,460.48	-1,172.68	-1,019.79	-853.43	12.00	12.00	0.00	
7,850.00	69.23	90.08	7,469.96	-1,172.71	-996.66	-830.50	12.00	12.00	0.00	
7,875.00	72.23	90.08	7,478.21	-1,172.74	-973.06	-807.11	12.00	12.00	0.00	
7,900.00	75.23	90.08	7,485.21	-1,172.77	-949.07	-783.33	12.00	12.00	0.00	
7,925.00	78.23	90.08	7,490.95	-1,172.80	-924.74	-759.22	12.00	12.00	0.00	
7,925.23	78.23	90.08	7,491.00	-1,172.80	-924.51	-758.99	0.00	0.00	0.00	
NIO B TARGET										
7,950.00	81.23	90.08	7,495.41	-1,172.84	-900.14	-734.84	12.11	12.11	0.00	
7,975.00	84.23	90.08	7,498.58	-1,172.87	-875.35	-710.26	12.00	12.00	0.00	
8,000.00	87.22	90.08	7,500.44	-1,172.90	-850.42	-685.55	12.00	12.00	0.00	
8,023.13	90.00	90.08	7,501.00	-1,172.93	-827.30	-662.64	12.00	12.00	0.00	
LP @ 90° INC, 90.08° AZM HOLD										
8,100.00	90.00	90.08	7,501.00	-1,173.03	-750.43	-586.45	0.00	0.00	0.00	
8,200.00	90.00	90.08	7,501.00	-1,173.17	-650.43	-487.33	0.00	0.00	0.00	
8,300.00	90.00	90.08	7,501.00	-1,173.30	-550.43	-388.22	0.00	0.00	0.00	
8,400.00	90.00	90.08	7,501.00	-1,173.43	-450.43	-289.10	0.00	0.00	0.00	
8,500.00	90.00	90.08	7,501.00	-1,173.56	-350.43	-189.99	0.00	0.00	0.00	
8,600.00	90.00	90.08	7,501.00	-1,173.70	-250.43	-90.87	0.00	0.00	0.00	
8,700.00	90.00	90.08	7,501.00	-1,173.83	-150.43	8.25	0.00	0.00	0.00	
8,800.00	90.00	90.08	7,501.00	-1,173.96	-50.43	107.36	0.00	0.00	0.00	
8,900.00	90.00	90.08	7,501.00	-1,174.09	49.57	206.48	0.00	0.00	0.00	
9,000.00	90.00	90.08	7,501.00	-1,174.23	149.57	305.59	0.00	0.00	0.00	
9,100.00	90.00	90.08	7,501.00	-1,174.36	249.57	404.71	0.00	0.00	0.00	
9,200.00	90.00	90.08	7,501.00	-1,174.49	349.57	503.82	0.00	0.00	0.00	
9,300.00	90.00	90.08	7,501.00	-1,174.62	449.57	602.94	0.00	0.00	0.00	
9,400.00	90.00	90.08	7,501.00	-1,174.76	549.57	702.05	0.00	0.00	0.00	
9,500.00	90.00	90.08	7,501.00	-1,174.89	649.57	801.17	0.00	0.00	0.00	
9,600.00	90.00	90.08	7,501.00	-1,175.02	749.57	900.29	0.00	0.00	0.00	
9,700.00	90.00	90.08	7,501.00	-1,175.15	849.57	999.40	0.00	0.00	0.00	
9,800.00	90.00	90.08	7,501.00	-1,175.29	949.57	1,098.52	0.00	0.00	0.00	
9,900.00	90.00	90.08	7,501.00	-1,175.42	1,049.57	1,197.63	0.00	0.00	0.00	
10,000.00	90.00	90.08	7,501.00	-1,175.55	1,149.57	1,296.75	0.00	0.00	0.00	
10,100.00	90.00	90.08	7,501.00	-1,175.68	1,249.57	1,395.86	0.00	0.00	0.00	
10,200.00	90.00	90.08	7,501.00	-1,175.82	1,349.57	1,494.98	0.00	0.00	0.00	
10,300.00	90.00	90.08	7,501.00	-1,175.95	1,449.57	1,594.09	0.00	0.00	0.00	
10,400.00	90.00	90.08	7,501.00	-1,176.08	1,549.57	1,693.21	0.00	0.00	0.00	
10,500.00	90.00	90.08	7,501.00	-1,176.21	1,649.57	1,792.33	0.00	0.00	0.00	
10,600.00	90.00	90.08	7,501.00	-1,176.35	1,749.57	1,891.44	0.00	0.00	0.00	
10,700.00	90.00	90.08	7,501.00	-1,176.48	1,849.57	1,990.56	0.00	0.00	0.00	
10,800.00	90.00	90.08	7,501.00	-1,176.61	1,949.57	2,089.67	0.00	0.00	0.00	
10,900.00	90.00	90.08	7,501.00	-1,176.74	2,049.57	2,188.79	0.00	0.00	0.00	
11,000.00	90.00	90.08	7,501.00	-1,176.88	2,149.57	2,287.90	0.00	0.00	0.00	
11,100.00	90.00	90.08	7,501.00	-1,177.01	2,249.57	2,387.02	0.00	0.00	0.00	
11,200.00	90.00	90.08	7,501.00	-1,177.14	2,349.57	2,486.13	0.00	0.00	0.00	
11,300.00	90.00	90.08	7,501.00	-1,177.27	2,449.57	2,585.25	0.00	0.00	0.00	
11,400.00	90.00	90.08	7,501.00	-1,177.41	2,549.57	2,684.37	0.00	0.00	0.00	
11,500.00	90.00	90.08	7,500.99	-1,177.54	2,649.57	2,783.48	0.00	0.00	0.00	
11,600.00	90.00	90.08	7,500.99	-1,177.67	2,749.57	2,882.60	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-19NH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-19NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,700.00	90.00	90.08	7,500.99	-1,177.80	2,849.57	2,981.71	0.00	0.00	0.00
11,800.00	90.00	90.08	7,500.99	-1,177.94	2,949.57	3,080.83	0.00	0.00	0.00
11,900.00	90.00	90.08	7,500.99	-1,178.07	3,049.57	3,179.94	0.00	0.00	0.00
12,000.00	90.00	90.08	7,500.99	-1,178.20	3,149.57	3,279.06	0.00	0.00	0.00
12,100.00	90.00	90.08	7,500.99	-1,178.33	3,249.57	3,378.17	0.00	0.00	0.00
12,200.00	90.00	90.08	7,500.99	-1,178.47	3,349.57	3,477.29	0.00	0.00	0.00
12,300.00	90.00	90.08	7,500.99	-1,178.60	3,449.57	3,576.40	0.00	0.00	0.00
12,400.00	90.00	90.08	7,500.99	-1,178.73	3,549.57	3,675.52	0.00	0.00	0.00
12,500.00	90.00	90.08	7,500.99	-1,178.86	3,649.57	3,774.64	0.00	0.00	0.00
12,600.00	90.00	90.08	7,500.99	-1,179.00	3,749.57	3,873.75	0.00	0.00	0.00
12,700.00	90.00	90.08	7,500.99	-1,179.13	3,849.57	3,972.87	0.00	0.00	0.00
12,800.00	90.00	90.08	7,500.99	-1,179.26	3,949.57	4,071.98	0.00	0.00	0.00
12,900.00	90.00	90.08	7,500.99	-1,179.39	4,049.57	4,171.10	0.00	0.00	0.00
13,000.00	90.00	90.08	7,500.99	-1,179.53	4,149.57	4,270.21	0.00	0.00	0.00
13,100.00	90.00	90.08	7,500.99	-1,179.66	4,249.57	4,369.33	0.00	0.00	0.00
13,200.00	90.00	90.08	7,500.99	-1,179.79	4,349.57	4,468.44	0.00	0.00	0.00
13,300.00	90.00	90.08	7,500.99	-1,179.92	4,449.57	4,567.56	0.00	0.00	0.00
13,400.00	90.00	90.08	7,500.99	-1,180.06	4,549.57	4,666.68	0.00	0.00	0.00
13,500.00	90.00	90.08	7,500.99	-1,180.19	4,649.57	4,765.79	0.00	0.00	0.00
13,600.00	90.00	90.08	7,500.99	-1,180.32	4,749.57	4,864.91	0.00	0.00	0.00
13,700.00	90.00	90.08	7,500.99	-1,180.45	4,849.57	4,964.02	0.00	0.00	0.00
13,800.00	90.00	90.08	7,500.99	-1,180.59	4,949.57	5,063.14	0.00	0.00	0.00
13,900.00	90.00	90.08	7,500.99	-1,180.72	5,049.57	5,162.25	0.00	0.00	0.00
14,000.00	90.00	90.08	7,500.99	-1,180.85	5,149.57	5,261.37	0.00	0.00	0.00
14,100.00	90.00	90.08	7,500.99	-1,180.98	5,249.57	5,360.48	0.00	0.00	0.00
14,200.00	90.00	90.08	7,500.99	-1,181.12	5,349.57	5,459.60	0.00	0.00	0.00
14,300.00	90.00	90.08	7,500.99	-1,181.25	5,449.57	5,558.72	0.00	0.00	0.00
14,400.00	90.00	90.08	7,500.99	-1,181.38	5,549.57	5,657.83	0.00	0.00	0.00
14,500.00	90.00	90.08	7,500.99	-1,181.51	5,649.57	5,756.95	0.00	0.00	0.00
14,600.00	90.00	90.08	7,500.99	-1,181.65	5,749.57	5,856.06	0.00	0.00	0.00
14,700.00	90.00	90.08	7,500.99	-1,181.78	5,849.57	5,955.18	0.00	0.00	0.00
14,800.00	90.00	90.08	7,500.99	-1,181.91	5,949.57	6,054.29	0.00	0.00	0.00
14,900.00	90.00	90.08	7,500.99	-1,182.04	6,049.57	6,153.41	0.00	0.00	0.00
15,000.00	90.00	90.08	7,500.99	-1,182.18	6,149.57	6,252.52	0.00	0.00	0.00
15,100.00	90.00	90.08	7,500.99	-1,182.31	6,249.57	6,351.64	0.00	0.00	0.00
15,200.00	90.00	90.08	7,500.99	-1,182.44	6,349.57	6,450.76	0.00	0.00	0.00
15,300.00	90.00	90.08	7,500.99	-1,182.57	6,449.57	6,549.87	0.00	0.00	0.00
15,400.00	90.00	90.08	7,500.99	-1,182.71	6,549.57	6,648.99	0.00	0.00	0.00
15,500.00	90.00	90.08	7,500.99	-1,182.84	6,649.57	6,748.10	0.00	0.00	0.00
15,600.00	90.00	90.08	7,500.99	-1,182.97	6,749.57	6,847.22	0.00	0.00	0.00
15,700.00	90.00	90.08	7,500.99	-1,183.10	6,849.57	6,946.33	0.00	0.00	0.00
15,800.00	90.00	90.08	7,500.99	-1,183.24	6,949.57	7,045.45	0.00	0.00	0.00
15,900.00	90.00	90.08	7,500.99	-1,183.37	7,049.57	7,144.56	0.00	0.00	0.00
16,000.00	90.00	90.08	7,500.99	-1,183.50	7,149.57	7,243.68	0.00	0.00	0.00
16,100.00	90.00	90.08	7,500.99	-1,183.63	7,249.57	7,342.80	0.00	0.00	0.00
16,200.00	90.00	90.08	7,500.99	-1,183.77	7,349.57	7,441.91	0.00	0.00	0.00
16,300.00	90.00	90.08	7,500.99	-1,183.90	7,449.57	7,541.03	0.00	0.00	0.00
16,400.00	90.00	90.08	7,500.99	-1,184.03	7,549.57	7,640.14	0.00	0.00	0.00
16,500.00	90.00	90.08	7,500.99	-1,184.16	7,649.57	7,739.26	0.00	0.00	0.00
16,600.00	90.00	90.08	7,500.99	-1,184.30	7,749.57	7,838.37	0.00	0.00	0.00
16,700.00	90.00	90.08	7,500.99	-1,184.43	7,849.57	7,937.49	0.00	0.00	0.00
16,800.00	90.00	90.08	7,500.99	-1,184.56	7,949.57	8,036.60	0.00	0.00	0.00
16,900.00	90.00	90.08	7,500.99	-1,184.69	8,049.57	8,135.72	0.00	0.00	0.00
17,000.00	90.00	90.08	7,500.99	-1,184.83	8,149.56	8,234.84	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-19NH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-19NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
17,100.00	90.00	90.08	7,500.99	-1,184.96	8,249.56	8,333.95	0.00	0.00	0.00	
17,200.00	90.00	90.08	7,500.99	-1,185.09	8,349.56	8,433.07	0.00	0.00	0.00	
17,300.00	90.00	90.08	7,500.99	-1,185.22	8,449.56	8,532.18	0.00	0.00	0.00	
17,400.00	90.00	90.08	7,500.99	-1,185.36	8,549.56	8,631.30	0.00	0.00	0.00	
17,500.00	90.00	90.08	7,500.99	-1,185.49	8,649.56	8,730.41	0.00	0.00	0.00	
17,600.00	90.00	90.08	7,500.99	-1,185.62	8,749.56	8,829.53	0.00	0.00	0.00	
17,619.82	90.00	90.08	7,501.00	-1,185.97	8,769.38	8,849.21	0.00	0.00	0.00	
TD at 17619.82' MD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
- hit/miss target										
- Shape										
PC 19NH PBHL	0.00	0.00	7,501.00	-1,185.97	8,769.38	1,218,220.08	3,203,897.76	39° 55' 48.360 N		104° 46' 22.548 W
- plan hits target center										
- Point										
PC 19NH LP	0.00	0.00	7,501.00	-1,172.93	-827.30	1,218,157.81	3,194,301.28	39° 55' 48.504 N		104° 48' 25.740 W
- plan hits target center										
- Point										

Formations							
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)		
4,335.23	4,188.00	PARKMAN					
5,071.40	4,892.00	SUSSEX					
5,641.30	5,437.00	SHANNON					
7,621.74	7,342.00	NIOBRARA					
7,925.23	7,491.00	NIO B TARGET					

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
400.00	400.00	0.00	0.00	BUILD 2°/100'	
1,250.02	1,237.60	-83.66	-93.12	HOLD 17° INC	
6,393.05	6,155.90	-1,088.64	-1,211.68	DROP 2°/100'	
7,243.07	6,993.50	-1,172.30	-1,304.80	HOLD VERTICAL	
7,273.07	7,023.50	-1,172.30	-1,304.80	KOP, BUILD 12°/100'	
8,023.13	7,501.00	-1,172.93	-827.30	LP @ 90° INC, 90.08° AZM HOLD	
17,619.82	7,501.00	-1,185.97	8,769.38	TD at 17619.82' MD	